Martin O'Malley, *Governor*
Anthony G. Brown, *Lt. Governor*

SHA State Highway Administration
Maryland Department of Transportation

Beverley K. Swaim-Staley, *Secretary*
Neil J. Pedersen, *Administrator*

November 8, 2010

RE: Comments on the *DRAFT Chesapeake Bay Total Maximum Daily Load*, September 24, 2010

Mr. Bob Koroncai
Water Docket, EPA. Mail Code: 2822T
1200 Pennsylvania Avenue, NW
Washington, D.C., 20460

Dear Mr. Koroncai:

The Maryland State Highway Administration (SHA) has been an NPDES MS4 Phase I, MS4 Phase II, industrial and construction activity permit holder for over 10 years and as such we have implemented many best management practices and programs to manage our stormwater and enhance the water quality of the Bay. We take our charge seriously to operate, maintain and enhance our highway network in the least environmentally impactive manner and we are entirely committed to the goals of the Chesapeake Bay TMDL. In our efforts to date, we have gained extensive knowledge and experience that we have been able to bring to bear in our review and interpretation of the Chesapeake Bay TMDL. Our comments are result of efforts to develop a plan to meet the goals and as a result we offer following comments related to items we see as

This has also proven useful in developing strategies for meeting the requirements to be placed on SHA for compliance with both the Maryland WIP and the Chesapeake Bay TMDL. Our comments are generated based on our efforts to develop strategies to meet the bay TMDL, especially with regard to issues which may delay or impede successful implementation towards achieving the goals. We thank you for the opportunity to participate in the various public meetings, webinars and workgroups over the last year and look forward to continuing a close working relationship with you and your team in developing the Phase II WIP as well as working to demonstrate compliance. We offer these comments for your consideration.

1) Backstop measures. Are these mandatory measures or will they only be employed if the 2017 goals are not achieved?

2) SHA has developed several scenarios for meeting the TMDL/WIP requirements and the costs are astronomical if pavement stormwater retrofits are required. SHA made a number of assumptions concerning acceptable strategies and pollutant removal efficiencies in order to develop an implementation plan, schedule and the cost estimate. SHA owns over 24,750 acres of impervious surfaces in the nine MS4 Phase 1 counties. SWM facilities have been

constructed since the mid 1980's (last 25 years) on all SHA projects and the current SHA SWM inventory contains over 2000 BMPs treating close to 2,500 acres of pavement. That represents approximately 10% of SHA owned impervious surfaces within the nine counties. The annual cost for maintenance of this SWM infrastructure is currently around $3 million.

Although we do not have an impervious shape file for the remaining 14 counties, we have estimated the impervious coverage in these areas based on lane miles. In order to treat 40% of the SHA impervious in the MS4 Phase II and non-MS4 areas, controls would need to be installed for approximately 6,250 acres. The estimated cost for design and construction is significant. These costs would be in addition to the costs above for the MS4 Phase I jurisdictions. According to the TMDL, 40% treatment of impervious surfaces will be required but the MD WIP lists both 20% and 40% restoration requirements for these areas.

Based on our current budget and the demonstrated expense of stormwater impervious retrofits, our current capacity is 2% retrofit over the next ten years. Unlike local jurisdictions, SHA cannot legally impose a stormwater utility tax on the travelling public to generate a source of revenue to meet these restoration goals. For this reason, increased federal funding is essential for meeting the TMDL allocations.

3) There is a concern that the 25% efficiency that is applied to stormwater BMPs is in conflict with current local stormwater regulations. In Maryland we are required to adhere to environmental site design (ESD) regulations. How do the criteria for sizing ESD practices in the 2000 MD Stormwater Design Manual, Chapter 5, compare to the 25% efficiency that will be assigned to them in the compliance modeling? Would areas that are considered fully treated by the ESD requirements in the MD 2007 Stormwater Law, be determined to be providing only a fraction of the pollutant load reduction that would be required for the same roadway? If so, how will this discrepancy be rectified?

4) Based on comment 4 above, we think the 25% stormwater BMP efficiency is too conservative and is not realistic for demonstrating compliance. In the Phase II WIP development, the sectors should use the actual assigned efficiencies for BMPs implemented rather than a conservative estimate in order to demonstrate compliance with the 2-year milestones.

5) Page 4-6, paragraph 1, mentions that "stream erosion is also a significant source of watershed sediment delivered to the bay. Currently, sufficient data do not exist to accurately quantify the portion of the total sediment load specifically from stream erosion." There has been significant research in the mid-Atlantic region concerning historic mill dams and their impact on the streams from colonial times. As these dams fail, tons of legacy sediment trapped behind them are released into the waterways. How can this fact

and other stream erosion sources not be included in this TMDL if restoration of the Bay is the ultimate goal? If the model is calibrated to monitoring data, but does not allow for the erosion within streams, the allocations to adjacent land uses will be overestimated and unachievable if the source lies within the stream. Improper management of flood flows has been shown to increase stream erosion, rather than improve it due to timing of multiple stormwater release structures within a watershed. Also, the importance of stream restoration as a method to restore the Bay is greatly underappreciated in this scenario.

6) NEPA/Cumulative impact assessments should include the impact to meeting the annual Chesapeake Bay TMDL (and local TMDLs) for new development. Will a jurisdiction's inability to adequately demonstrate no-load increases result in refusal of federal permits and funding?

7) Has EPA considered how the TMDL might impact environmental justice? SHA can envision a point where options become severely limited for meeting reduction goals, especially within densely developed watersheds.

8) The executive order strategy lists protection of agricultural lands as a goal, but converting agricultural lands to forest may be one of the more efficient and effective means to achieve the bay restoration. SHA has been forced to acquire farmland in the past to manage stormwater from our highways. Will this practice no longer be possible? How will this conflict be mitigated? Which is more important?

9) To what extent can the Nitrogen-Phosphorus Exchanges be employed? To what degree can the nitrogen or phosphorus loads be lowered through this process?

10) What is the timeframe for implementation of BayTAS and who will be responsible for the data uploads?

11) Many of the controls that will be employed to comply with the TMDL and WIP will impact US Waters, involving permitting agencies such as the US Army Corps of Engineers, US Fish and Wildlife, US Marine Fisheries and the MDE Wetlands and Waterways division. SHA suggests that they must be recognized as partners in the WIP development process to ensure compliance within a relatively short implementation period.

Currently SHA experiences a 1 to 3 year timeframe in obtaining permits for stormwater, sediment control and nontidal wetlands impacts. We would also suggest that the permit process itself should be integrated into the implementation process in order to facilitate achievement of the desired goals. Success of the implementation plans depends upon the ability to get the proposed projects permitted, funded and constructed at a much faster rate.

SHA has great experiences of partnership working with the regulators however, these hard to achieve goals will require new tools of the trade.

12) If the MS4 jurisdictions are to be expanded to include the entire Maryland Bay watershed, and if the impervious accounting requirements are to be imposed on the MS4 Phase II jurisdictions as well as the non-MS4 areas, then sufficient time to develop the base impervious surfaces, stormwater facility treatment areas, land uses and right-of-way would be necessary. Our previous MS4 Phase I permit allowed 5 years to meet the impervious accounting requirement before imposing retrofit percentages.

13) Has the lag in time for bringing non-MS4 areas under the MS4 permit and the time needed for the new MS4 jurisdictions to achieve full program capacity been considered in the WIPs?

14) Given the fact that the SHA roadway system services all Maryland Bay watersheds, our challenges are exacerbated with the requirements that TMDLs be met in each segmented watershed. Unlike local governments, the SHA MS4 coverage is not limited to a small, manageable number of segmented watersheds, but rather we expect reduction goals will be assigned for SHA in all 58 segmented watersheds. For this reason, we would like to propose a banking strategy whereby a jurisdiction can over-manage in one watershed segment and achieve credit in another. This bank will be held only by the jurisdiction and would not address the concept of trading among sectors. It would be a tool by which the jurisdiction could achieve flexibility in meeting load reductions.

15) If the atmospheric deposition (non-point source) of nitrogen in vehicle exhaust is accounted for independent of the urban stormwater land uses (point sources), how is the nitrogen deposited from vehicle exhaust quantified separately from the nitrogen washing off transportation land uses? Or is this nitrogen load counted twice? Also, would loads for proposed roadway projects need to be adjusted to account for the Clean Air Act as well?

16) The TMDL states that 25-28% of total nitrogen loading is derived from areas outside the Chesapeake Bay Watershed. Are phosphorus and sediment deposited by means of atmospheric deposition as well? If so, what are the loads deposited for these pollutants?

Although the need to reduce the impacts of these materials is recognized, SHA requests that EPA consider funding mechanisms to offset the cost of mitigating atmospheric contaminants derived from sources outside the watershed.

17) We have seen economic analysis documents for other federal actions such as the effluent limitations guidelines. Has EPA developed an economic analysis or cost feasibility document for the implementation of the Chesapeake Bay TMDL?

18) Will the federal government take part in offset programs that purchase and sell credits with other jurisdictions in order to offset their loads?

19) Can establishment of SAV be considered a BMP for pollutant removal and if so, what load reductions and/or efficiencies can be applied?

20) According to Section 6, the TMDL load allocations based on the current WQS would require the E3 scenario for nutrients. For the sediment loads, most of the basins would be set at allocations below the E3 level, but the entire Eastern Shore of Maryland would be set at the 'All Forest' level load allocation. WQS are proposed to be changed for Delaware, DC and Maryland and these proposed changes result in the allocation loads being brought to a level that is deemed reasonable because they are not E3 or All Forest.

21) What specific activities are included in the E3 scenario and is this level of compliance considered achievable?

22) We do not agree that roadways should be included in the urban stormwater sector when applying pollutant loading. The pollutant loadings for roadways and highways are different from other types of impervious surfaces such as rooftops or residential, commercial or business development. The loadings can also differ based on average daily traffic for the roadway which is important when developing controls at the smaller watershed level. We request that consideration be given to developing separate roadway sectors. SHA owned open areas have different pollutant loadings. SHA does not apply fertilizer for its roadside areas. SHA also employs nutrient management plan for all of its capital improvement construction projects which includes soil testing and Nutrient Management Plan (NMP) for each site to minimize pollutants to the extent possible. Construction sites are monitored for vegetative cover in addition to NMP implementation.

23) Since the TMDL for regulated stormwater will be enforced through MS4 permits, the data concerning the development of the loads and reductions specific to the MS4 permits should be made available so the permit holders can understand fully the factors involved in their impacts, correct data as necessary and run model scenarios in order to develop and verify their individual implementation plans.

24) SHA questions whether the implicit margins of safety of the TMDL are appropriate and reasonable in view of the unprecedented scope and costs of roadway water quality retrofits projected in the Draft Phase I WIP. (add issue of explicit MOS for sediment adjustments based on WIP)

SHA feels that significant margins of safety may not be warranted for wastewater treatment plants as highly regulated sectors of the TMDL, since these entities have shown significant

increases in efficiency, are subject to close regulatory scrutiny, and will likely experience future enhancements.

If such margins of safety are carried forward in the TMDL, SHA feels that Maryland's WIP will unfairly burden SHA with inappropriate expectations and costs.

25) The explicit margin of safety employed in the allocation of sediment loads seems to be very arbitrary and we question the validity. Why not allocate the lower number in the sediment range to all sectors?

26) SHA has concerns about the assessment of its efforts over the past 10 years to restore vegetation and prevent soil and runoff losses to waterways. The selection of baseline dates is particularly important, since over 200 acres of wetlands and 5 miles of stream have been restored by SHA stewardship programs above and beyond legally mandated mitigation requirements. Please clarify how the TMDL has measured and accounted for SHA programs to enhance and restore natural ecosystems, and how these programs have been calculated to reduce or offset SHA loading reductions in the WIP.

Since 2009, as part of the "Marylanders Plant Trees" program working towards a goal of planting a million trees, SHA funded the planting of 178,000 trees (265 acres) in SHA's MS4 Phase I and Phase II jurisdictions. These plantings were successful through partnerships with Department of Natural Resources and Department of Public Safety and Correctional Services. SHA requests these urban tree credits be applied towards our reduction goals.

SHA believes that a credit for completed efforts to improve environmental quality during the time when baseline data was being collected and the Model was under development is appropriate and should be applied to the TMDL and WIP.

27) Because the ability of SHA to mitigate stormwater runoff from impervious surfaces is often constrained by narrow rights-of-way, SHA is very interested in trade mechanisms to meet its obligations under the TMDL, and is particularly interested in opportunities to restore public and private property adjacent to state roads within severely impacted watersheds.

SHA remains committed meet its goals as specified in the Maryland WIP and also requests that the issues of trading and compliance tracking be given high priority in future discussions of the Chesapeake Bay Partnership, and that the adopted methods allow a high degree of transparency between government agencies and landowners.

28) SHA has significant concerns about urban stormwater assessment and assumptions of the Model regarding the efficiency of trees versus other types of vegetation to reduce sediment

and nutrient loading. SHA acknowledges the effectiveness of trees, however raises concern that there may be no benefits projected by the Model for meadow vegetation, dense shrubs and turfgrass.

a) Shrubs and Improved Turfgrass:
A significant proportion of land managed by SHA is turfgrass, and much of this area must remain in turfgrass for reasons of motorist safety and operational maintenance. SHA requests that the Model recognize and address the importance and contributions of soil improvements, turfgrass, meadow and other vegetation types so enhancements that capture or reduce sediment and nutrient loads are given appropriate allocations and credit in the WIP.

SHA believes that the ability of shrubs to provide many of the benefits of trees also requires analysis in the Model and TMDL. The addition of trees to roadside areas has significant implications to motorist safety, future system maintenance and disposal costs. The addition of trees to roadside areas also has implications to future regulatory compliance since tree and forest removals are regulated under state law, and their losses must be mitigated.

However, because shrubs are not as hazardous to motorists, are less costly to maintain SHA requests that the Model be reviewed and modified to consider the use of shrubs as an acceptable alternative to trees in roadside areas, and particularly in those areas where their presence is a potential hazard to motorists. Overall, SHA believes that the opportunities for shrub installation in areas with limited right of way and along high speed roadways are far greater than for tree installation.

Therefore, SHA proposes the use of shrubs as an effective strategy to reduce sediment and nutrient pollution to offset the WLA for SHA, and requests that the efficiencies of shrub cover be explored and developed for the Model and TMDL, with appropriate allocations and credit for shrub installation in the WIP. SHA believes that the expanded use of shrubs is appropriate and will significantly enhance the ability of SHA to meet the goals of the TMDL within its existing right of way.

b) Agronomic Improvements:
SHA believes that the TMDL may not adequately recognize the potential benefits of restoring areas that are bare or where turfgrass and other groundcover is thin. Although the potential benefit of agronomic improvements in nutrient efficiency has been included in the Agricultural Sector of the WIP, methods to improve groundcover efficiency with improved cultivars and adapted species, or the benefits of many urban landscape management practices such as aeration have not been addressed.

Although roadside soils often suffer from unique soil fertility and pH issues as a consequence of salt loads, compaction and poor drainage, the potential benefits of traditional and innovative practices to improve soil conditions, plant rootzone penetration, groundcover density and growth are not fully explored in the TMDL or WIP. However, SHA believes that these factors may be among the improvements most likely to prevent sediment and phosphorus losses from roadside areas, and important methods to capture sediment and nitrogen loads from road surfaces.

29) SHA thinks that the scope of the TMDL and WIP must allow far greater interagency cooperation and dialog. To that end, SHA requests that all entities, including SHA, with significant responsibilities under the TMDL be given greater access to discussions of the Chesapeake Bay Partnership, and much greater opportunity to participate in the future development of the TMDL and Chesapeake Bay Watershed Model.

We have fostered much environmental stewardship over the years and look forward to a much closer relationship with EPA, MDE, DNR, MDA, and other key agencies to expand our programs that offset the impacts of the highway system on water quality. Together we can ensure that the most efficient and cost-effective strategies are developed to reduce sediment and nutrient loads from SHA roads and facilities.

Thank you for your time and consideration of these comments. If you require further input or need clarification, please contact me at kpujara@sha.state.md.us.

Sincerely,

Karuna Pujara
Chief, Highway Hydraulics Division